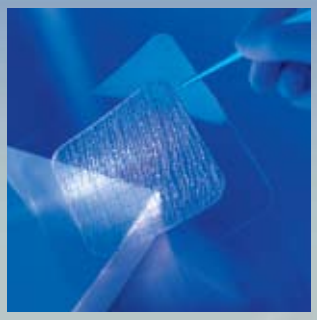
Issue 3 Spring 2007

woundforum

Sharing European Wound Management Experiences

INSIDE STORY

Hydrosorb® sheet hydrogel dressing Clincal assessment of residue-free wound treatment in action



INSIDE:

- Our exciting new website HWMTraining.com is now available!
- EWMA 2007
- Case Study: Tendon saving wound management with Hydrosorb
- Case Study: Ambulatory provision of phase-specific wound care
- New educational books available electronically

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Welcome to the third issue of the 'new look' Wound Forum

This issue aims to continue our theme of 'sharing global clinical experiences and practices' by drawing on studies from Spain and Germany focusing on tendon saving wound management and phase specific wound care. Also, this issue contains details of the introduction of a range of new electronically available books covering a range of wound management issues.

I am also delighted to announce the launch of a new product-training tool, which uniquely enables Trusts with large numbers of nursing staff to manage the product training process incurred during the introduction of a dressings formulary.

As always, we welcome all your comments (positive or negative!) and trust that the articles in this issue may provide some food for thought.

Hayley Summersgill
Marketing Manager, Wound Management Division (Great Britain)

New Training Management Tool

Do you need to train large numbers but are limited for time?

Increasingly over the past few years Trusts have begun purchasing wound care products collaboratively with large numbers of Trusts working together in order to offer higher volumes to suppliers in return for lower prices and/or improved service. A knock-on effect of collaborative buying is that when a new product is adopted by several Trusts at once, a larger than usual number of users must receive product training within a short space of time. For example, Hartmann is presently working with a large supply confederation, which would require approx 3000 users to be trained in 2-3 months. Within clinical settings it can be at best difficult, and at worst impossible, to ensure large numbers attend training seminars so a new solution had to be found.

A new formulary implementation across several Trusts can potentially be a huge administrative task for the Trust individual responsible for ensuring that users understand new products and are competent and safe to use them.

Added to the task of monitoring who's been trained, training venues need to be organised, suppliers co-ordinated and someone needs to ensure users are available on the day to attend training. Suppliers have been known to contribute to organising training but the costs have usually been returned to the Trust in the form of higher product prices. In addition, whilst users may have attended training there is no guarantee that they have fully understood the product sufficiently.

Hartmann has striven to develop an efficient solution for Trusts by developing a secure, web-based training tool which not only delivers training but which automatically monitors who has undertaken training –and crucially- who has passed or failed the end competency test. Thus providing the Trust with a quick and accurate overview of which users have been trained to a satisfactory competency level and those that haven't. By using the web, potentially thousands of users can be trained at the same time despite their geographical location at whatever time suits the individual. Personalised certificates are then produced upon the successful completion of each training module.

More information can be obtained by using the fax-back response card contained in this issue of Wound Forum.

Hartmann supporting EWMA, Glasgow 2-4th May 2007

As Hartmann aims to share wound care experience from countries across the world with this Wound Forum journal, EWMA was also founded with a key objective of drawing together expertise from professionals throughout Europe. With these joint pan-European perspectives, Hartmann is happy to consistently support EWMA's annual conference, which this year is to be held back in the UK where the first conference was held in 1991.

The theme of this year's conference is "evidence, consensus and driving the agenda forward". Hartmann will be supporting this theme by providing practical workshops run by clinicians and focusing on training and the exchange of expertise. There will also be an 'Age Explorer' facility, a specifically designed suit which enables the wearer to experience the limited abilities of an elderly person. This will be featured in the context of applying dressings and compression garments independently.

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Tendon saving wound management with Hydrosorb

INTRODUCTION

Exposed tendons or tendinous parts in secondary and/or chronic wounds such as leg ulcers very often cause difficulties for the medical and nursing teams in charge. Whether a tendon can be saved or not, depends in such a situation to a great extent on whether a proper wound treatment with appropriate dressing materials is applied.

Desiccation and infection are the greatest threats to exposed tendons or tendinous parts. A suitable dressing system must therefore be able to create and constantly maintain a moist wound environment and to offer the wound a reliable protection against infection. The method of treatment using moist gauze compresses is unsuitable here, since these generally dry out if not properly re-humidified, and offer, due to their textile structure, an unsafe barrier against contamination by germs. Conversely, we have had good results with semi-occlusive dressing materials which are described in the following case report.

The medical team should, in any event, be informed about hydrogels and hydrocolloids or should already have acquired the relevant experience. The patients should also be given adequate information which would make them aware of the possibility of saving a tendon for which, however, no guarantee can be given in every case.

Furthermore, it is obviously necessary to apply causal therapeutical measures in order to ensure a sufficient blood supply to the wound region, as well as an adequate infection management. Colonisation by bacteria, as seen in every wound, is nevertheless no contra-indication for the application of semi-occlusive wound dressings. However, should the microbiological examination reveal Pseudomonas (pyocyaneus), which grow rapidly in such a moist environment, moist wound treatment can only be started after the elimination of these bacteria, even if it means taking the risk of losing the tendon.

Fig 1: Venous leg ulcer after débridement in hospital. The tendon of the tibialis anteri or muscle is exposed.

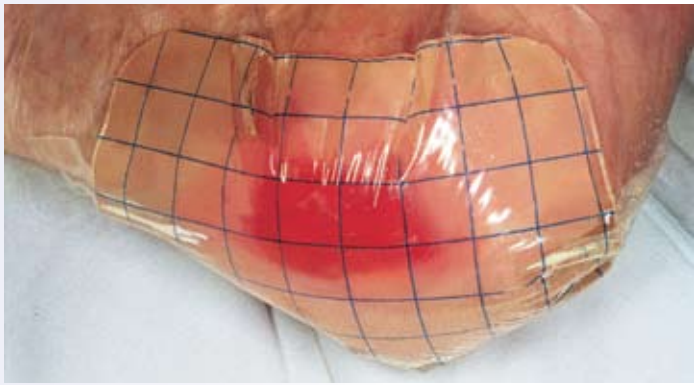

Fig 2: Wound treatment under Hydrosorb.

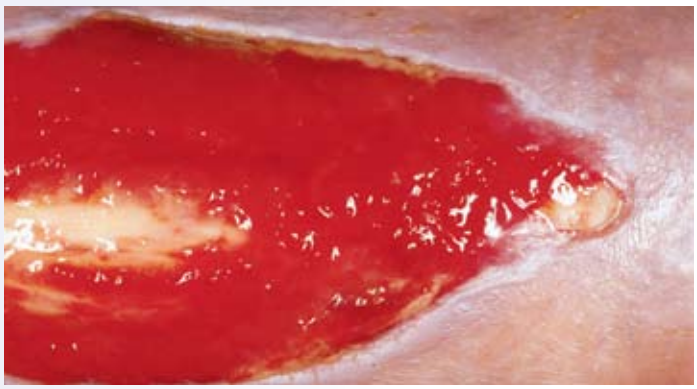

Fig 3: When changing the gel sheets, the first fine granulation islands had appeared in the area of the exposed tendon.

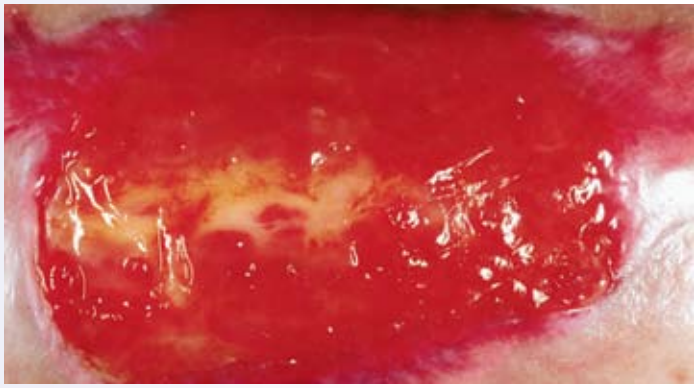

Fig 4: Continuation of the treatment with Hydrosorb - fresh, healthy granulation tissue covers the entire wound.

During the moist wound treatment of a venous leg ulcer with tendon involvement, compression therapy must be carried out which is especially easy to practice if hydrogels are applied. Conversely, in underlying aterial disease with exposed tendinous parts within a wound region that is still sufficiently supplied with blood, a warming and protecting cotton wool boot should be applied and the foot of the bed should be lowered. In diabetic patients, the blood glucose levels must be stabilised as optimally as possible.

CASE REPORT

A 63 year old patient with a venous leg ulcer on the left lower leg with exposure of the tendon of the anterior compartment. According to information given by the patient, the defect was treated over 12 years with ointments and tulle gras. Over approximately the past three months, the ulcer has steadily grown and 4cm of the tendon have been exposed for 20 days. Compression treatment had only occasionally been applied. The ulcer had not been debrided for more than 4 weeks.

Fig 5: The exposed tendon is completely covered with granulation tissue; start of the treatment with growth factors.

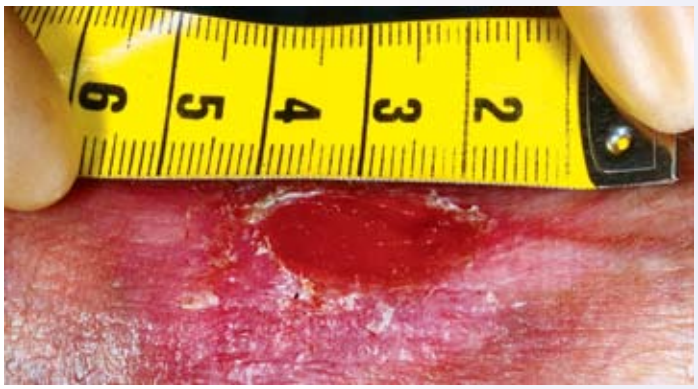

Fig 6: At the surface, just a quarter of the wound area of thye original venous leg ulcer can be recognised.

Fig 7: After three months, a residual ulcer of a diameter of one centimetre could be seen; complete healing of the ulcer had been achieved two weeks later.

Findings on admission / bacteriological status

Arterial pulses right++++, segmental pressures 170-160-140, left++++, segmental pressures 160-160-160. The laboratory parameters were all found to be normal. A microbiological sample taken on admission showed Staphylococcus aureus and blastomycetes. Eight days later, no bacteria or fungi could be found on microbiological examination. Six weeks later, a smear culture revealed Staphylococcus epidermidis which however did not negatively influence the healing process.

Therapy and clinical progress

After an extensive wound cleansing, the treatment with hydrogel Hydrosorb was started. Compressive bandages were rigorously applied to the legs. The venous ulcer became more extensive at the beginning of the hydrogel treatment because underperfused and dead tissue became detached from the wound edges. Underneath, pink and intact granulation tissue could be seen.

At the beginning of the treatment, the dressings were changed every other day. On these occasions, the ulcer was rinsed carefully with Lavasept solution. The colour of the gel sheets became opaque and cloudy after about 30 hours, which is a sign that the sheets' capacity to take up secretions has been exhausted. The dressing changes were carried out under aseptic conditions. Changing the gel sheets must be done swiftly in order to prevent drying out or chilling of the wound. To avoid stripping cell layers off the fresh granulation tissue, this was cleansed only when absolutely necessary, using a cotton sponge. Rinsing with Lavasept solution was halted.

The granulation tissue grew very well and quickly. After about ten days, the first sparse granulation islands could be seen on the exposed tendon of the tibialis anterior muscle. From the eleventh day of treatment onwards, it was sufficient to change the dressing every third day. The granulation tissue beneath Hydrosorb stretched itself over the entire wound area and covered the intact tendon almost completely after 20 days.

Because the patient could not make up her mind with respect to rehabilitating procedures further treatment was given on an ambulatory basis, involving the use of growth factors (PDGF) to stimulate re-epithelialisation. This only became possible because the wound condition could be transformed into this optimal, receptive state which also enabled the saving of the exposed tendon. A critical remark may be justified; could the treatment have been continued, using Hydrosorb alone, until the closure of the wound occurred?

The venous leg ulcer has completely healed; the patient has been asked to wear regularly her compression stockings, or to apply compressive bandages to her legs.

SUMMARY

This example serves to show, that it has now become possible, with the use of modern dressing materials, to save exposed tendons or tendinous parts in situations where, formerly, the scalpel had often to create the conditions necessary for wound healing. For the affected patients and their relatives, this is surely not an unpleasant form of treatment which offers medical and nursing staff the possibility of saving, henceforth, exposed tissue structures with minimal demands on time and material.

Due to the high average age of patients of an ambulatory ward, treatment is required mainly for chronic ulcers of venous and arterial origin **(Fig. 1a-c).**

Pressure ulcers, often with considerable tissue destruction, are also frequently encountered **(Fig. 1d).**

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Ambulatory provision of phase-specific wound care

SUMMARY

In recent years, the methods for treating wounds have considerably improved, not least because of the development of novel wound dressings. A modern wound treatment strives to keep out not only external noxae from the wound, but to support it as optimally as possible in its needs during the individual phases of healing, and to stimulate the cellular processes during each stage of the healing process. This particularly requires the phase-specific application of wound dressings with different physical characteristics.

The aim of this study was to determine to what extent the wound dressings that are nowadays on offer for phase-specific wound treatment, meet the requirements and make it possible to provide successful treatment also under ambulatory conditions.

The following wound dressings were included in this study:

- Calcium alginate compresses (Sorbalgon), which are especially suitable for cleansing exudative, fissured and infected wounds.
- Hydrocolloid dressings (Hydrocoll), which also serve the purpose of cleansing exudative, but shallow wounds that are free from infection, and of promoting the formation of granulation tissue.
- Transparent hydrogel compresses (Hydrosorb), which provide the wound with humidity through the high water content of the matrix of their gel, prevent desiccation of the wound also over longer periods of treatment, and further the formation of granulation tissue and epithelialisation.
- Auto-adhesive film dressings (Hydrofilm), which were used at times during the epithelialisation phase, and mainly to protect the wound. 46 patients, 28 women and 18 men, participated altogether in the study, their average age being 65.2 years. The average age of the wounds was 39 days.

Four of the examined individuals had burns, the remaining patients were suffering from ulcers of different origins, which were treated on the ward and at home visits for eight weeks. For the treatment, the above described products were used either individually or in combination.

For the evaluation of the study results, the localisation, the degree of severity of the wound and its condition as well as its age and the degree of pain that it caused were taken into account. In addition, cases of inadequate wound care and their respective explanations were recorded.

During the period of treatment, records were kept of the chosen wound dressings and the intervals between the dressing changes. The proportion of wound healing during the eight weeks of investigation was 90.1%. The average healing time until cicatrisation was 46 days. A total of 21 wounds healed completely, i.e. to 100%, in an average time of 38 days. For the remaining 25 wounds, the healing took on average 82 days. The effectiveness of the examined wound dressings was remarkable in every respective phase of healing. The expected progress with respect to healing and cicatrisation of the wound did occur. Because of their tolerance, the wound dressings were particularly well accepted by the patients.

2nd degree burn, 20-yearold patient

Fig. 2a: State of the burn after 5 days.

Fig. 2b: Wound treatment with Hydrosorb hydrogel compresses.

Fig. 2c: Result after 30 days, with complete cicatrisation.

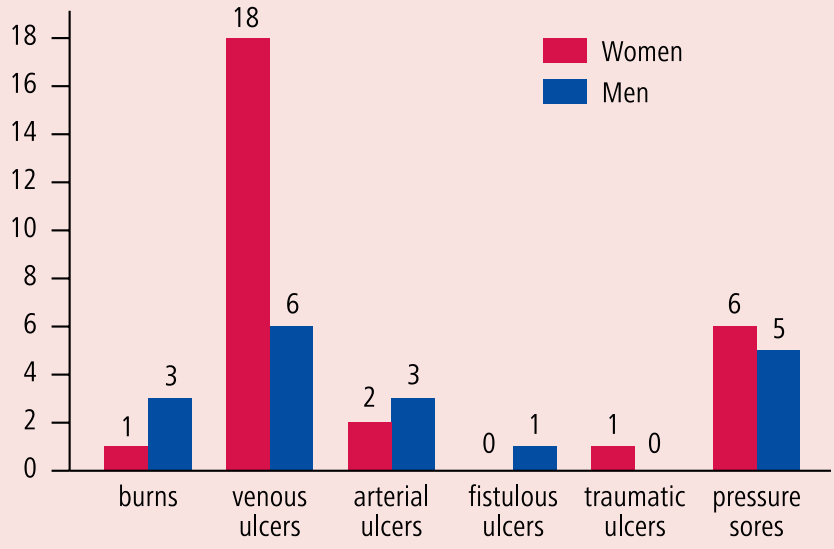
INTRODUCTION

The replacement of skin and the healing of wounds is a difficult process, in which both local factors like the age of the wound, its size and condition as well as systemic influences of the whole organism such as the presence of metabolic disease play an important part.

Each case must be evaluated individually and therefore requires an individually adjusted treatment and control, in order also to react in time to complications which might possibly later appear, such as wound infections.

Although all the patients had different types of wounds, the majority were diagnosed as having serious venous pathology of the legs, ischaemia and metabolic syndromes such as diabetes or hypertension. The wounds were therefore mainly chronic, which exposed them to additional complications. Diabetic patients in particular tend to develop serious leg wounds and quickly spreading digital lesions. Hence lengthy treatments are often required, which are necessarily coupled with longer absence from work, a fact which is not without socio-economic consequences. This kind of clinical picture presents a serious problem in primary care, on the ward, and also at home visits. In this sense, efficient local wound care acquires a particular value. It was the aim of this study, to examine the wound dressings that are available for this purpose, with respect to their suitability and effectiveness. The local treatment of wounds must of course simultaneously go hand in hand with the causal therapy of the underlying diseases which initially led to the occurrence of the ulcers.

WOUND DESCRIPTION ACCORDING TO AETIOLOGY AND GENDER



Patients and methods

The study was conducted with a total of 46 patients, who were all registered with the health centre "Pizarrales" in Salamanca and who either visited the first-aid unit of the hospital or were treated at home. The patients had skin wounds of varied origins, and at different stages. The total duration of the study was eight weeks and involved the assessment of the patients' status, a thorough assessment of the wounds, the setting up of an individual treatment plan as well as its consistent implementation and control of progress by means of written records. The wound condition as well as the progress of wound healing were recorded using photographs.

Patients' status

The patients treated were predominantly of an advanced age. 44 of the patients treated were between 41 and 90 years old, so that a difficult, delayed healing process was to be anticipated. Eight patients were suffering from diabetes, six had hypertension. The immune system of theses patients was considerably weakened, which led to the consequence of an increased risk of infection. A large part of the patients suffered malnutrition, severe dehydration, as well as protein and vitamin deficiencies because of these chronic pathological conditions. Additionally, the patients' limited mobility often presented an obstacle to the compensation of the state of venous circulation; ten patients were completely immobilised. The patients and / or their relatives were informed about the treatments which had been chosen for them. Patients who were suffering from vascular disease received an adequate treatment to improve their circulatory status.

Venous ulcer, 56-year-old patient

Fig. 3a: Beginning of treatment of the very painful ulceration.

Fig. 3b: Loose tamponage of the small crateriform ulcer with Sorbalgon ...

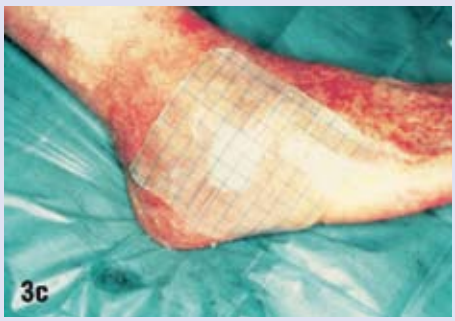


Fig. 3c: ... and covering with Hydrosorb, to treat also the area adjacent to the wound.

Fig. 3d: Approximately 75% of the ulcer has healed after 8 weeks of the study; the patient is free from pain.

Wound assessment

In order to determine the size of the wound, its length, width and depth were considered and determined either through measurement using conventional means, or also through calculation by redrawing the edges of the wound on its dressing. These measures also served as the point of reference for evaluating the process of healing.

According to a standardised evaluation score, the wounds were subdivided in degrees of severity:

- 1st degree: Lesion of the epidermis and dermis, appearance of blisters or pustules (3 patients),
- 2nd degree: Involvement of the subcutis, the wound is deep (14 patients),
- 3rd degree: Loss of substance of the whole skin structure, signs of infection with purulent exudate (23 patients),
- 4th degree: Loss of substance of the whole skin structure, necrosis with muscular damage and convoluted, expanding lesions at the wound edges (6 patients).

When assessing the various wound conditions we noted that, in addition to the partial or total loss of the dermis, four wounds showed blisters or pustules, nine wounds were already covered with granulation tissue and two wounds were affected by severe eczema. In two other wounds the findings were consistent with sclerotic dermatitis. In one case, varices and severely disturbed local perfusion prevented healing of the ulcer.

When assessing painful sensations, 8 patients were suffering, according to their own statements, from mild pain; 21 patients indicated more considerable pain, and 17 suffered from severe pain. The latter were essentially patients who were suffering from arterial ulcers at the lower legs and ankles, and who experienced persistent pain, even at rest, and during the night.

The age of the wound was determined through the case history of the patient and / or the time when the injury occurred. It also seemed to be important to note the fact that some patients had been suffering for a long time from their wounds, which until then had unsuccessfully been treated with the most varied techniques of treatment. The average age of the wounds in the 46 examined patients was 39 days.

INTERACTIVE WOUND DRESSINGS

Sorbalgon
should be inserted loosely into the wound, without exerting pressure, and undergoes transformation into a gel through absorption of wound secretions, this keeps the wound moist; for cleansing of heavily exudative, deep wounds, infected or not, with a reducing effect on micro-organisms as they are trapped in the matrix of the gel.

Hydrocoll
is a self-adhesive elastomer, which contains absorbent hydrocolloids with swelling properties. When absorbing secretions, these transform into a gel, which expands within the wound and keeps it moist; for the cleansing of more severely exuding, non-infected wounds; for removal of coatings covering the wound; for promoting granulation.

Hydrosorb
provides the wound immediately with humidity through the high water content of its gel matrix, it therefore needs no wound secretion to be functional; for softening dry coatings in the cleansing phase; for the problem-free maintenance of humidity during the granulation phase; for promoting the formation of granulation and young epithelium.

Wound care products

The wound dressings Sorbalgon (calcium alginate), Hydrosorb (hydrogel), Hydrocoll (hydrocolloid) as well as Hydrofilm (semipermeable film dressing) were provided for the study and were rated according to the following criteria:

- capacity to absorb wound exudate
- cleansing capacity
- protection against infection
- preserving humidity of the wound
- avoiding wound disturbance
- freedom from pain
- simplicity of application
- tolerance

Measures of local treatment

According to the condition of the wound, basic measures such as surgical debridement by means of scissors and bistoury, as well as rinsing of the wound were being used, whenever possible, for the initial wound cleansing. This was followed by the support of the cleansing process through autolytic debridement with calcium alginate compresses, or hydrocolloids. As the healing progressed, mainly hydrogels were applied in order to preserve moisture during wound granulation and epithelialisation. 469 wound care sessions were undertaken, the distribution of which was as follows: 108 with Sorbalgon, 43 with Hydrocoll, 283 with Hydrosorb and 35 with Hydrofilm. In 49 cases, a combination of Sorbalgon and Hydrosorb was applied and in 12 cases the combination of Sorbalgon and Hydrofilm was used. These dressing combinations were left on the wound for 3–4 days. The frequency of dressing changes was on average 5–7 days for the application of Hydrosorb, whereas Hydrocoll was changed after 6 days on average. In case of extensive shallow wounds, in which the format of the wound dressing was not sufficient to cover the entire wound, several overlapping wound dressings were applied. The dressings were changed under aseptic precautions.

Causal treatment measures

Compression therapy was used in venous ulcers (application of elastic bandages, beginning at the metatarsophalangeal joints, and proceeding upward to the thigh). For the nightly decongestion of the legs, the patient was advised to raise the foot of the bed. Furthermore, patients were advised especially to maintain a degree of physical activity and to avoid an attitude of passiveness.

In the case of arterial ulceration, the therapeutic measures included an adequate treatment of the hypertension and were directed towards behavioural changes, above all at the avoidance of tobacco and alcohol. In patients with diabetes, blood glucose levels as close as possible to normal were striven for. Additionally, attempts were made to educate the patients about the tremendous importance of good chiropody.

As part of the treatment of pressure ulcers, care-providing relatives were given instructions regarding the repositioning of the patient to bring about a maximal pressure relief of the wound region. In some cases, it was necessary to improve the general state of health of the patient through appropriate nourishment and adequate rehydration.

Arterial ulcer, 68-year-old patient

Fig. 4a:
State of the already 6 months old ulcer at the beginning of treatment.

Fig. 4b:
After initial wound cleansing, application of Sorbalgon in combination with Hydrosorb, followed by care using exclusively Hydrosorb.

Fig. 4c-e:
Record of the continuous healing process.

RESULTS

Of the 46 patients, three interrupted the treatment because of change of residence. One patient, who had an extensive wound at the lower back, died after 20 days of therapy; a clear improvement of the wound under the treatment with Sorbalgon had earlier been achieved. During the 8 weeks of the study, the rate of healing was 90.1%. 21 wounds had healed to 100% after an average time of 46 days. The remaining wounds healed to 81.8% during the whole duration of the study.

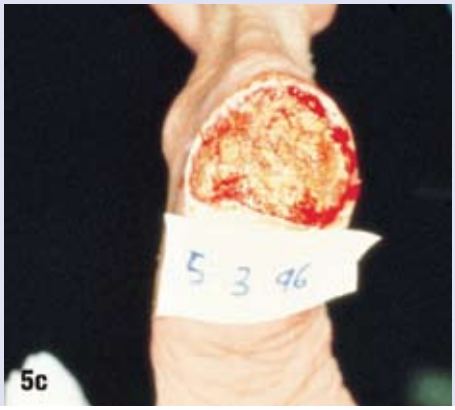
Skin diseases such as dermatitis or eczema underwent a clear amelioration in 90% of the cases.

Pressure sore at the heel, 86-year-old patient

Fig. 5a:
Beginning of therapy.

Fig. 5b:
Softening of the necrosis through Hydrocoll, in preparation of debridement.

Fig. 5c-:
Record of the healing process.



DISCUSSION

The present study, involving a variety of types of wounds in 46 cases and individually chosen phase-specific methods of treatment based on the application of different wound dressings, presents in our view a good base for the practical evaluation of the wound dressings which were chosen.

A large proportion of the pressure sores that were treated were exudative to the utmost extent and responded to the treatment with Sorbalgon in the expected way: Cleansing was very swiftly accomplished. This compress is extraordinarily absorbent, and does not cause maceration of the wound edges. Sorbalgon did not stick to the wound, ensuring that a painless dressing change became possible. Likewise, Hydrocoll produced a satisfactory cleansing effect through its good absorbent capacity, so that in each case the wound condition quickly improved.

Under the treatment with Hydrosorb, a rapid development becomes apparent during the granulation phase. In exuberant granulation it could be noticed that the wound dressing caused the granulation to flatten out towards the wound edges and thus positively supported epithelialisation. The slight cooling effect of Hydrosorb favourably influenced the painful sensations, which in some cases entirely disappeared. This circumstance also enhanced patients' compliance. It is also very noticeable that no dressing fragments remained on the wound, that no bad odours occurred, and that the flexibility of the soft hydrogel material enhanced the comfort of the dressing.

The non-absorbent but semipermeable film dressing Hydrofilm had been used more or less solely to protect freshly formed epithelial tissue. However, it also led to a clear improvement of the skin area surrounding the wound.

With all the different wound dressings, none of the dressing changes damaged freshly formed tissue: the dressing changes were always atraumatic. During the granulation phase, it was very convenient to benefit from the possibility that Hydrosorb, in particular, could be left for several days on the wound. This reduced the number of wound care procedures, which was not only welcomed for economic reasons, but which also ensured the continuity of treatment, especially in ambulatory care. It also seems that allowing the wound to rest by minimizing as much as possible the number of manipulations of the wound, had a positive influence on the healing progress.

A considerable improvement of wound healing was observed in those cases in which a surgical debridement could precede the treatment with dressings. We also feel that instructing the patients in matters concerning nourishment and hygiene is imperative in order to optimize the healing conditions.

As a concluding remark it can be said that the phase-specific treatment with the wound dressings under examination has contributed to the expected wound healing.

CASE PRESENTATIONS

Some individual courses of wound treatment from this study are subsequently described.

2nd degree burn

20-year-old patient with a five day old burn, which had been caused by scalding (Fig. 2a-c).

Diagnosis made on the ward: 2nd degree burn of the right dorsum of the foot, formation of blisters and complete loss of the epidermis and part of the dermis. The patient states that she feels severe pain.

Treatment carried out: Cleansing and disinfection of the wound through rinsing with normal saline solution, cautious blotting with sterile gauze compresses. Hydrosorb is applied to dress the wound, the foot is bandaged with mild pressure by means of elastic bandages. The patient is advised to relieve the foot from strain and to rest as much as possible. The dressing was changed every 6 days. The wound had completely healed after 30 days, without

any visible scar formation. Only five dressing changes were necessary to obtain this result.

Venous leg ulcer

56-year-old patient with a two month old venous ulcer at the lateral aspect of the ankle, caused by varicosis (Fig. 3a-d).

Diagnosis: Varicosis of both lower limbs, treated with venotonic drugs.

Diagnosis made on the ward: Venous ulcer at the lateral aspect of the ankle caused by varicosis, size of the wound 3 x 4 cm, irregular wound edges, wound infection, granulation tissue scarcely present. The patient states that he is in severe pain.

Treatment applied: A combined treatment using Sorbalgon and Hydrocoll was started after the initial wound cleansing. This combination was kept for three wound care sessions, involving dressing changes every 5 days.

Afterwards the wound was dressed 6 times with Hydrosorb, which was changed every 7 days. As a supporting measure, an elastic bandage was applied.

During the eight weeks of the investigation, a healing of 75% was observed, and the pain also completely subsided. The healing process was completed after 90 days of further treatment with Hydrosorb.

Arterial ulcer

68-year-old patient with arterial ulcer at the left lower leg. The wound is already 6 months old and had up to now been treated unsuccessfully with various therapeutic procedures (Fig. 4a-e).

Diagnosis: Morbid obesity of type III; arterial hypertension and chronic, longstanding arterio-venous insufficiency.

Diagnosis made on the ward: Infected arterial ulcer with irregular wound edges at the lower leg, size of the wound 4 x 3 cm, the wound is very painful.

Treatment chosen: After the initial cleansing of the wound following the usual procedure, Sorbalgon was loosely inserted into the wound which was additionally covered with Hydrosorb in order to provide treatment of the area adjacent to the wound. This combined wound dressing was left in place for 5 days. The patient reported that the pain had disappeared since the application of the first dressing.

4 more sessions of wound treatment were carried out with the combination of Sorbalgon and Hydrosorb, followed by 5 treatments with Hydrosorb alone. The compresses were changed every 7 days. The patient received advice regarding the appropriate dietary and hygienic measures to be taken.

Over the eight weeks of the study, the wound healed to 90%. The complete healing of the ulcer was achieved after 86 days of treatment.

Continued on the back page

New Electronically available – Hartmann wound management books

Hartmann has recently launched four new medical editions available as PDFs. The four editions consist of:

1) Wounds and Wound Management
(192 pages) covering the phases of and influences on wound healing, wound infection, the principles of treating traumatic wounds, thermal injuries, surgical wounds and epithelial wounds, principles of treating ulcers, radiation damage and tumours.

2) Phase specific wound management of decubitus ulcer
(81 pages) covering the development of decubitus, classifications and principles of management and prophylaxis.

3) Phase specific wound management of venous leg ulcer
(90 pages) covering causes, anatomy and physiology, phase specific management.

4) Diagnosis, treatment and prevention of diabetic foot syndrome
(121 pages) covering diagnosis, treatment and prevention, epidemiology, risk factors, concurrent diseases, basic and biomechanical treatment and tertiary prevention factors eg. effects of educating patients, adapted footwear, screening etc.

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(Continued from page 11: Ambulatory provision of phase-specific wound care)

Pressure sore
86-year-old patient with a pressure sore at the right heel, the closed necrotic cutaneous cap had been present for two weeks (Fig. 5a-e).

Doctor's diagnosis: Insulin-dependent diabetes type II, immobilisation, severe metabolic weakness with disturbed compensation of the blood sugar levels.

Diagnosis made on the ward: Pressure sore at the right heel with closed necrotic cap, size of the wound 8 x 6 cm with irregular edges.

Treatment carried out: In order to ease the ablation of the dry necrotic tissue, the heel was treated with Hydrocoll over several days; this was followed by surgical ablation of the necrotic tissue.

Because of the resulting abundant secretion, the wound was treated with Sorbalgon and Hydrocoll. As the secretion abated, Hydrocoll alone was applied 6 times and the dressings were changed at 7-day intervals. During the epithelialisation phase, the wound was cared for with Hydrofilm.

Blood sugar levels were checked at regular intervals. The relatives were given the appropriate instructions with respect to nourishment, hygiene and pressure-relieving positioning of the patient.